# SAULT TRIBE WIND ENERGY FEASIBILITY STUDY



STATUS REPORT



In 2002, the tribe's electrical energy costs Were \$1.5MM. Windmill electrical power may provide a means for energy cost reduction while environmentally friendly.



### **Project Overview**

- Feasibility of a windmill power plant in the Upper Peninsula of Michigan
  - Analyze the economic and technical feasibility of both small and large scale wind power plants

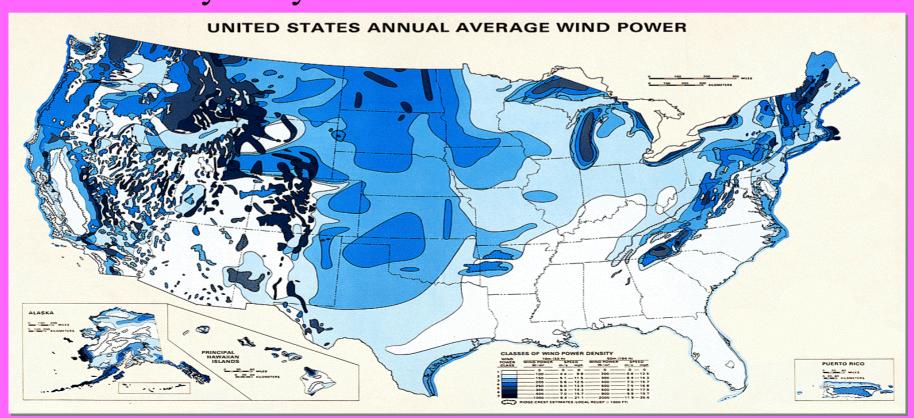


### Project Overview (Continued)

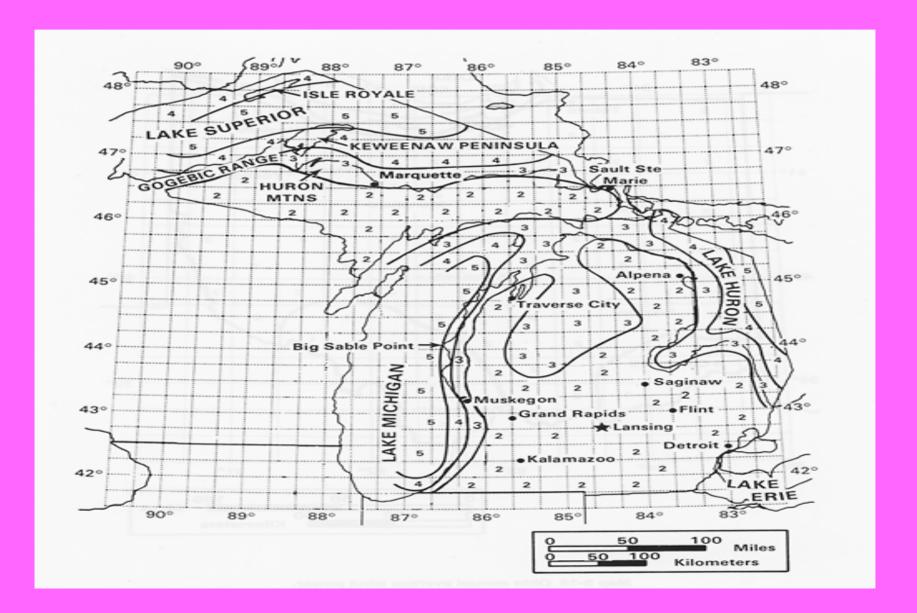
- Economic and technical analysis
  - Wind resource assessment on tribal lands
  - Evaluation of existing transmission system to evacuate power
  - Designs and cost estimates
  - Environmental issues
  - Electricity cost and economic viability
  - Partner with utility companies

### Estimating Wind Energy Resource

- Michigan's wind energy potential ranks 14th out of the lower 48 contiguous states
- Michigan has wind potential to justify a wind feasibility study



# In the Upper Peninsula of Michigan, we have wind classes from 2-5



### **Project Location**

The Seven Easternmost Counties of the Upper Peninsula of Michigan



Climate: Long, windy, cold winters
Mild summers

### International Bridge, Soo Locks & St. Mary's River



### St. Mary's River View from the International Bridge



# Windmill Power Plant Locations in Great Lakes Region

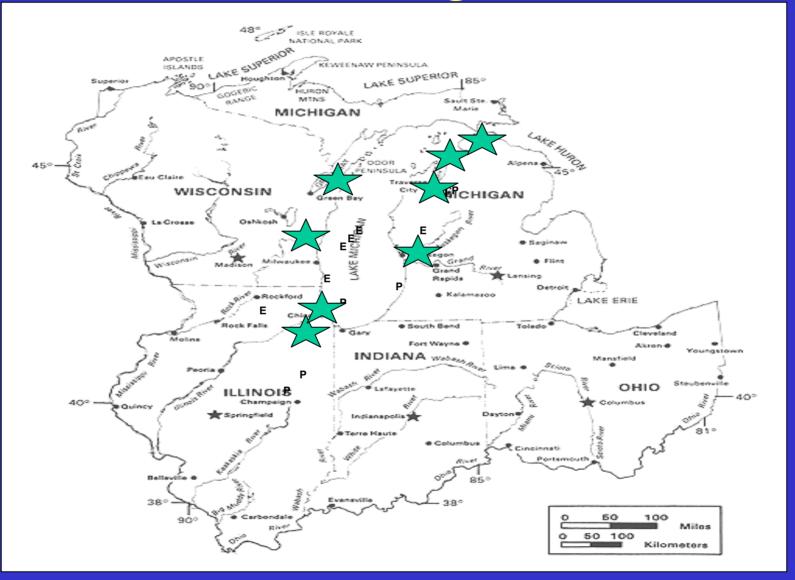
- Wind power plants in the Great Lakes Region exist only in Wisconsin and Michigan
  - Since 1998, five Wisconsin wind power plants have gone online and are located northeast of Green Bay, south of Lake Winnebago and the Wisconsin river

- Michigan has two wind power plants
  - Traverse City operating since 1996
  - Mackinaw City operating since 2001

## Windmill Power Plant Locations in Great Lakes Region

- Proposed wind power plants in the Great Lakes Region are planned for Wisconsin, Illinois, and Michigan
  - Wisconsin's project is planned for north of Milwaukee, off Lake Michigan
  - Illinois has two proposed projects located southeast of Chicago
  - Michigan has two proposed projects both are in the Lower Peninsula: Friendship township in Emmet county, and Benona township (north of Muskegon, off Lake Michigan)

# **Existing & Proposed Windmill Power Plant Locations in Great Lakes Region**



### **Project Participants**

- Global Energy Concepts
  - Chief Executive Officer
    - Karen Conover
  - Registered Professional Engineer
    - Kevin Smith
  - Technical Assistance
    - Rana Vilhauer
- Global Energy Concepts -Subcontractors
  - Lake Michigan Wind & Sun
    - John Hippensteel
  - Engineer and Meteorologist
    - Robert Owen

#### Sault Tribe Project Team

- Project Director
- Susan McCoy
- Grants Administrator
- Toni Osterhout
- Resource Specialist
- Jeff Holt
- Legal Department
- Todd Gravelle
- Technical Advisor
- Tammy Graham
- Administrative Assistant
- Kim Green

### **Objectives**

- Lower long-term energy costs by using wind energy to offset current costs
- Diversify employment opportunities
- Develop renewable energy resources to become economically self-sufficient
- Develop a significant source of renewable energy for our community



# WELCOME TO OUR COMMUNITY



**Tribal Administration Building** 



### Sault Tribal Health Center



Long, windy, cold winters and.....



# Niigaanagiizhik Ceremonial Building



**Mild Summers !!!** 



# Joseph K. Lumsden Elemanne Public School Academy



YES.....WINTER AGAIN!!!



# Chi Mukwa (Big Bear) Community Recreation Center



### Soo Indians Junior A Hockey Team One of Two Ice Rinks at Chi Mukwa



Go Indians!!!!!!



## New Manistique Tribal Community Center



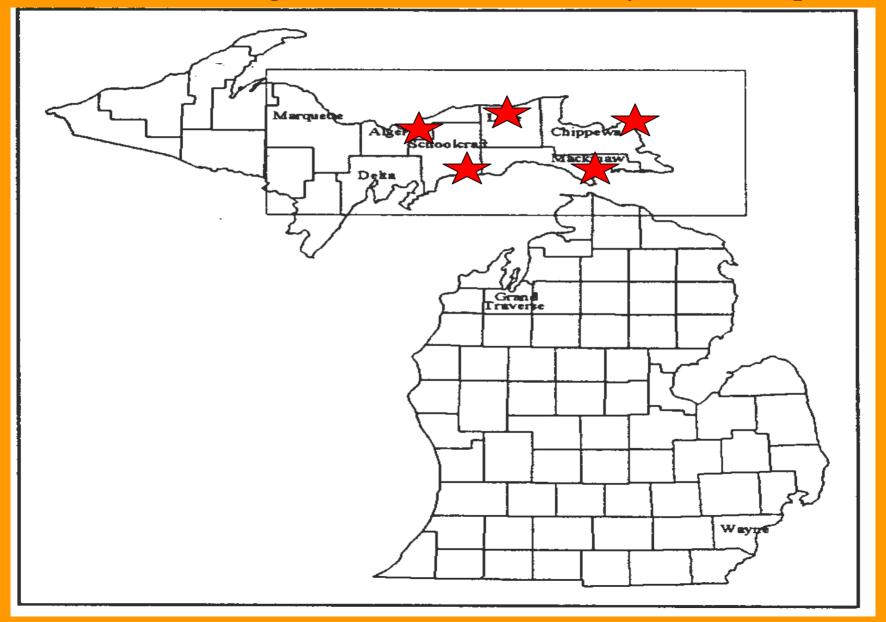
(Under Construction)



## Project Status

- •The Tribe successfully developed and implemented a contract with Global Energy Concepts, the contract became effective January 1, 2003
- •April 2003 a kickoff meeting was held with the Project Team and representatives from Global Energy Concepts. During the week of the meeting, site surveys were completed by Global.
- •The Project Team meets weekly and selected five tribal sites for testing.

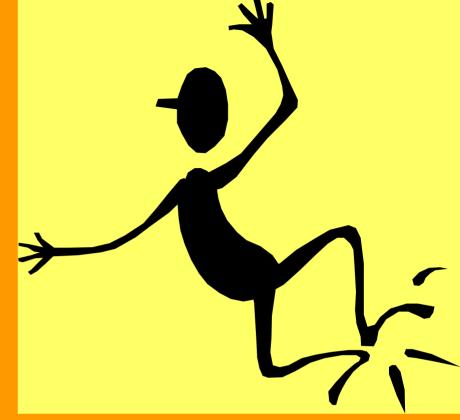
Five selected sites are located in: Sault Ste. Marie, St. Ignace, Wetmore, Newberry, & Manitique



### Accomplishments

- Three Towers Installed
  - 1. Sault Ste. Marie
  - 2. St. Ignace
  - 3. Wetmore
- •All Three Towers Transmitting Data

Equipment Ordered for Final Two Towers





#### **TOWER INSTALLATION - SAULT STE. MARIE**



#### OK GUYS .... IT ISN'T THAT DIFFICULT!



#### COME ON LADIES ..... SHOW EM' HOW IT'S DONE!!



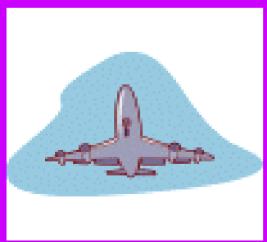
**UP......** 

#### & AWAY!!!!



### **Technical Issues**





**Manistique and Newberry Sites Near Airports** 

- Need FAA Approval Prior to Installation
- Application for Permit Sent in August
- •Window for Installation Short Prior to Winter Setting In
- •Could Lose Opportunity for Installation of Final Two Sites

### **Activities Yet to Be Completed**

- Installation of Final Two Towers
- Data Collection



- •Evaluation of Transmission Capacity
- Conceptual Designs & Cost Estimates



- •Financial & Economic Assessment
- •Review Energy Market



### **Update as of 11/13/03**

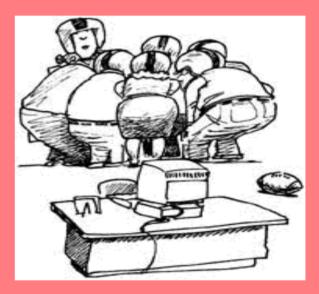


•Final Two Sites Approved by FAA!!

•Installation of Towers Scheduled for 11/20/03



- Continue collecting data
- •Complete Feasibility Study
- Look for Wind Energy Opportunities





#### We told you it was cold in the U.P. !!!!!

